

IN THE CLAIMS

Please **amend** claims 1, 4, 7, and 15-17 as shown in the Summary of the Claims section, *infra*.

No new matter has been added.

STATUS OF THE CLAIMS

1. (currently amended) A vertical alignment mode liquid crystal display apparatus comprising:

a pair of substrates opposing each other with at least one electrode provided on one or both of the substrates comprising the pair of substrates and one side of each of the pair of substrates is subjected to a vertical alignment treatment;

a liquid crystal layer interposed between the pair of substrates, the liquid crystal layer containing non-twisted or non-bended liquid crystal molecules having a negative dielectric anisotropy; the at least one electrode being used for applying an electric field across the liquid crystal layer; and

at least one volume excluding member that is provided on all or a portion of only one side edge of one or more of said at least one electrodes on one or both of said substrates,

wherein;

at an initial state, at which no voltage is applied to one or more of said at least one electrodes, the liquid crystal molecules retain a substantially perfectly vertical alignment; and

at a second state, at which voltage is applied, a distal end of the liquid crystal molecules isare tilted in a uniform direction about a proximal end of the liquid crystal molecules such that said liquid crystal molecules are tilted away from the at least one volume excluding member on the side edge of one or more of said at least one electrodes to a side edge of said one or more at least one electrodes opposite said side edge having the volume excluding member.

wherein the proximal end of the liquid crystal molecules is that end which is closer to the at least one volume excluding member.

2. (Original) A liquid crystal display apparatus according to claim 1, wherein the volume excluding member comprises at least one of a protrusion and a concave stepped portion.

3. (Withdrawn) A liquid crystal display apparatus according to claim 1, wherein the volume excluding member is provided along the entirety of the at least one side edge of the at least one electrode.

4. (currently amended) A vertical alignment mode liquid crystal display apparatus comprising:

a pair of substrates opposing each other with at least one electrode provided on one or both of the substrates comprising the pair of substrates and one side of each of the pair of substrates is subjected to a vertical alignment treatment;

a liquid crystal layer interposed between the pair of substrates, the liquid crystal layer containing non-twisted or non-bended liquid crystal molecules having a negative dielectric anisotropy; at least one electrode provided on each of the pair of substrates, the at least one electrode being used for applying an electric field across the liquid crystal layer; and

~~at least one volume excluding member that is provided on all or a portion of only one side edge of one or more of said at least one electrodes on one or both of said substrates;~~

a plurality of volume excluding members that is provided on one or more of said at least one electrode on at least one of the pair of substrates, each volume excluding member of the plurality of volume excluding members being disposed on at least a portion of each side edge of an opposing pair of side edges of said at least one electrode but so as not to oppose each other, wherein:

at an initial state, at which no voltage is applied to one or more of said at least one electrodes, the liquid crystal molecules retain a substantially perfectly vertical alignment; and

at a second state, at which voltage is applied, a distal end of the liquid crystal molecules ~~is~~are tilted about a proximal end of the liquid crystal molecules away from the at least one volume excluding member ~~on the side edge of one or more of said at least one electrodes to a side edge of said one or more at least one electrodes opposite said side edge having the volume~~ excluding member to provide said liquid crystal molecules with a plurality of azimuths,

wherein the proximal end of the liquid crystal molecules is that end which is closer to the at least one volume excluding member.

5. (Original) A liquid crystal display apparatus according to claim 4, wherein:

the at least one electrode on the at least one of the pair of substrates includes a first side edge and a second side edge; and

the plurality of volume excluding members are provided along a portion of the first side edge and along a portion of the second side edge.

6. (Original) A liquid crystal display apparatus according to claim 4, wherein a non-conductive window portion is formed in the at least one electrode on the at least one of the pair of substrates.

7. (currently amended) A vertical alignment mode liquid crystal display apparatus comprising:

a pair of substrates opposing each other with at least one electrode provided on one or both of the substrates comprising the pair of substrates and one side of each of the pair of substrates is subjected to a vertical alignment treatment;

a liquid crystal layer interposed between the pair of substrates, the liquid crystal layer containing non-twisted or non-bended liquid crystal molecules; the at least one electrode being used for applying an electric field across the liquid crystal layer

wherein:

the liquid crystal layer includes at least one pixel portion and a non-pixel portion, the at least one pixel portion corresponding to the at least one electrode; and

at an initial state, at which no voltage is applied to one or more of said at least one electrodes, the liquid crystal molecules in the at least one pixel portion are oriented in a

substantially perfectly vertical alignment and the liquid crystal molecules in the non-pixel portion are oriented in a uniaxial horizontal alignment and

when voltage is applied to the at least one electrode. the liquid crystal molecules in the at least one pixel portion are also oriented in a substantially uniaxially horizontal alignment.

8. (Original) A liquid crystal display apparatus according to claim 7, wherein the liquid crystal molecules in the at least one pixel portion are oriented in a horizontal alignment so as to be tilted in a uniform direction when a voltage is applied to the at least one electrode.

9. (Original) A liquid crystal display apparatus according to claim 8, wherein a volume excluding member is formed on a portion of the at least one electrode.

10. (Original) A liquid crystal display apparatus according to claim 9, wherein the volume excluding member comprises at least one of a protrusion and a concave stepped portion.

11. (Original) A liquid crystal display apparatus according to claim 8, wherein a side of the at least one of the pair of substrates facing the liquid crystal layer is subjected to a rubbing treatment.

12. (Original) A liquid crystal display apparatus according to claim 8, wherein the at least one electrode comprise a comb electrode.

13. (Original) A liquid crystal display apparatus according to claim 7, wherein the liquid crystal molecules in the non-pixel portion are oriented in a uniaxial horizontal alignment by at least one method selected from the group consisting of : subjecting a horizontal alignment film to a rubbing treatment; subjecting a vertical alignment film to a selective chemical modification treatment followed by a rubbing treatment; subjecting a vertical alignment film to a selective irradiation of ultraviolet rays followed by a rubbing treatment; and subjecting a vertical alignment film to an irradiation of selectively polarized ultraviolet rays.

14. (Original) A liquid crystal display apparatus according to claim 8, wherein a direction of the horizontal alignment of the liquid crystal molecules in the at least one pixel portion is substantially identical to a direction of uniaxial horizontal alignment of the liquid crystal molecules in the non-pixel portion.

15. (currently amended) A vertical alignment mode liquid crystal display apparatus comprising:

a pair of substrates opposing each other;

a liquid crystal layer interposed between the pair of substrates, the liquid crystal layer containing liquid crystal molecules having a negative dielectric anisotropy; at least one electrode provided on each of the pair of substrates, the at least one electrode being used for applying an electric field across the liquid crystal layer; and

at least one volume excluding member,

wherein: one of the at least one volume excluding member is provided on the at least one electrode on at least one of the pair of substrates, the volume excluding member being provided so as to be on at least a portion of one side edge of the at least one electrode;

a side of each of the pair of substrates facing the liquid crystal layer is subjected to a vertical alignment treatment; and

a distal end of the liquid crystal molecules is~~is~~ tilted about a proximal end of the liquid crystal molecules in a uniform direction from the at least one volume excluding member side edge of the at least one electrode to an opposite side edge of said at least one electrodes when a voltage is applied to the at least one electrode,

wherein the proximal end of the liquid crystal molecules is that end which is closer to the at least one volume excluding member.

16. (currently amended) A vertical alignment mode liquid crystal display apparatus comprising:

a pair of substrates opposing each other;

a liquid crystal layer interposed between the pair of substrates, the liquid crystal layer containing liquid crystal molecules having a negative dielectric anisotropy; at least one electrode provided on each of the pair of substrates, the at least one electrode being used for applying an electric field across the liquid crystal layer; and

a plurality of volume excluding members provided on the at least one electrode on at least one of the pair of substrates, each of the plurality of volume excluding members being provided so as to be on at least a portion of each of an opposing pair of side edges of the at least one electrode but so as not to oppose each other, wherein:

a side of each of the pair of substrates facing the liquid crystal layer is subjected to a vertical alignment treatment; and

a distal end of the liquid crystal molecules isare tilted about a proximal end of the liquid crystal molecules in a uniform direction from the at least one side edge of the at least one electrode to an opposite edge when a voltage is applied to the at least one electrode,

wherein the proximal end of the liquid crystal molecules is that end which is closer to the at least one volume excluding member.

17. (currently amended) A vertical alignment mode liquid crystal display apparatus comprising:

a pair of substrates opposing each other;

a liquid crystal layer interposed between the pair of substrates, the liquid crystal layer containing liquid crystal molecules; and

at least one electrode provided on at least one of the pair of substrates, the at least one electrode being used for applying an electric field across the liquid crystal layer,

wherein:

the liquid crystal layer includes at least one pixel portion and a non-pixel portion, the at least one pixel portion corresponding to the at least one electrode; and

when voltage is not applied to the at least one electrode, the liquid crystal molecules in the at least one pixel portion are oriented in a vertical alignment and the liquid crystal molecules in the non-pixel portion are oriented in a uniaxial horizontal alignment; and

when voltage is applied to the at least one electrode, the liquid crystal molecules in the at least one pixel portion are also oriented in a substantially uniaxially horizontal alignment.